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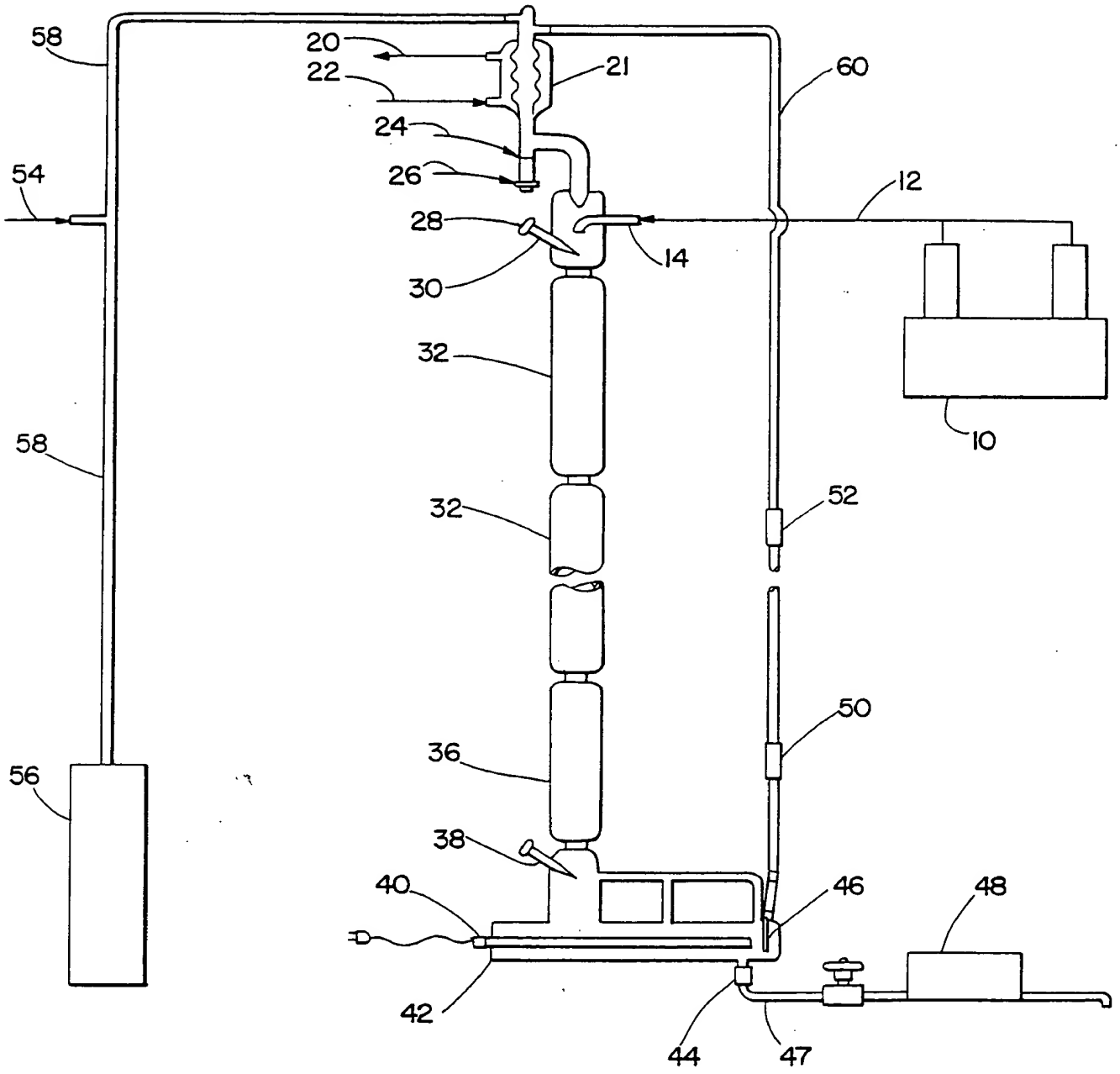
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Fig. 1

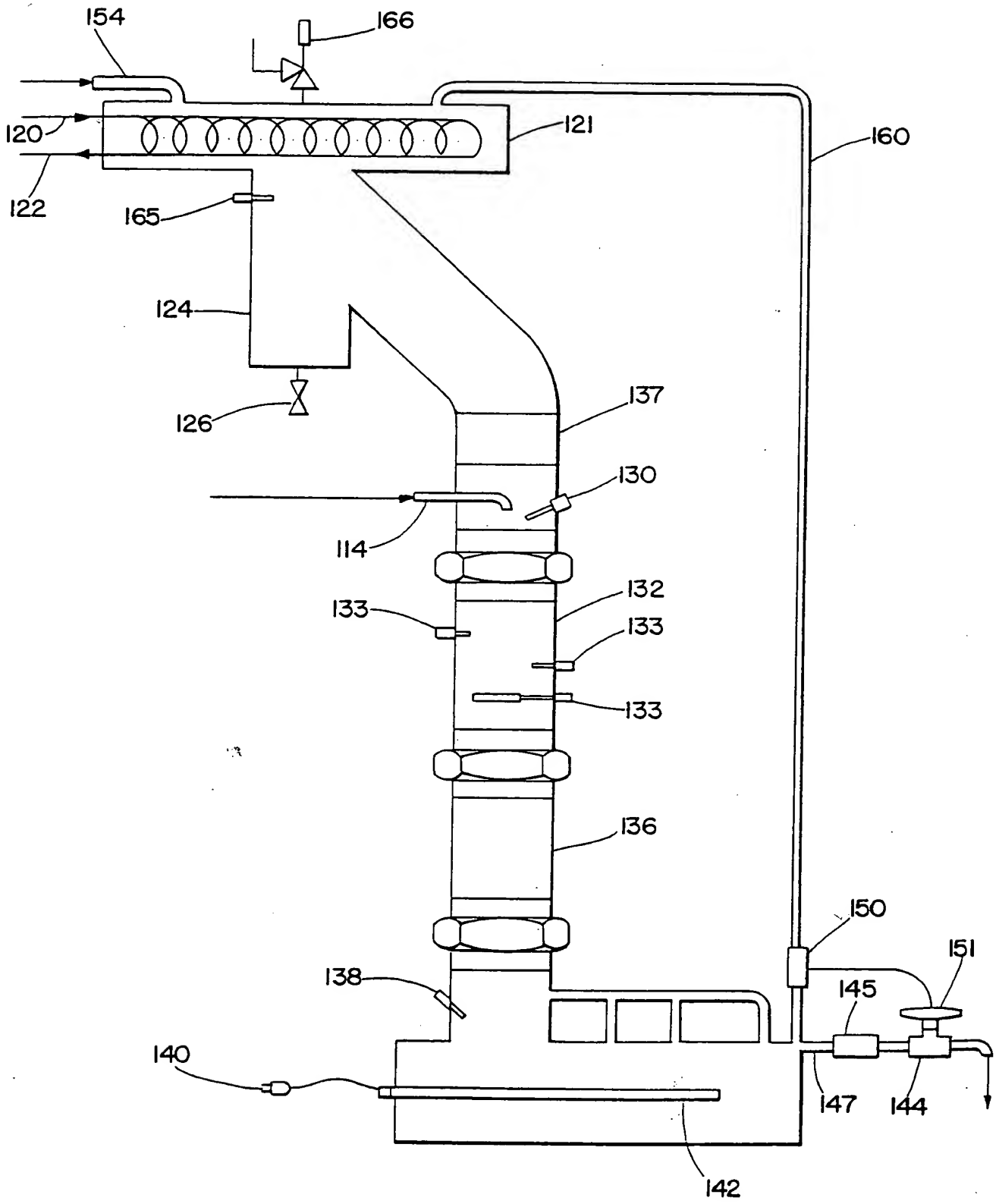

Fig. 2

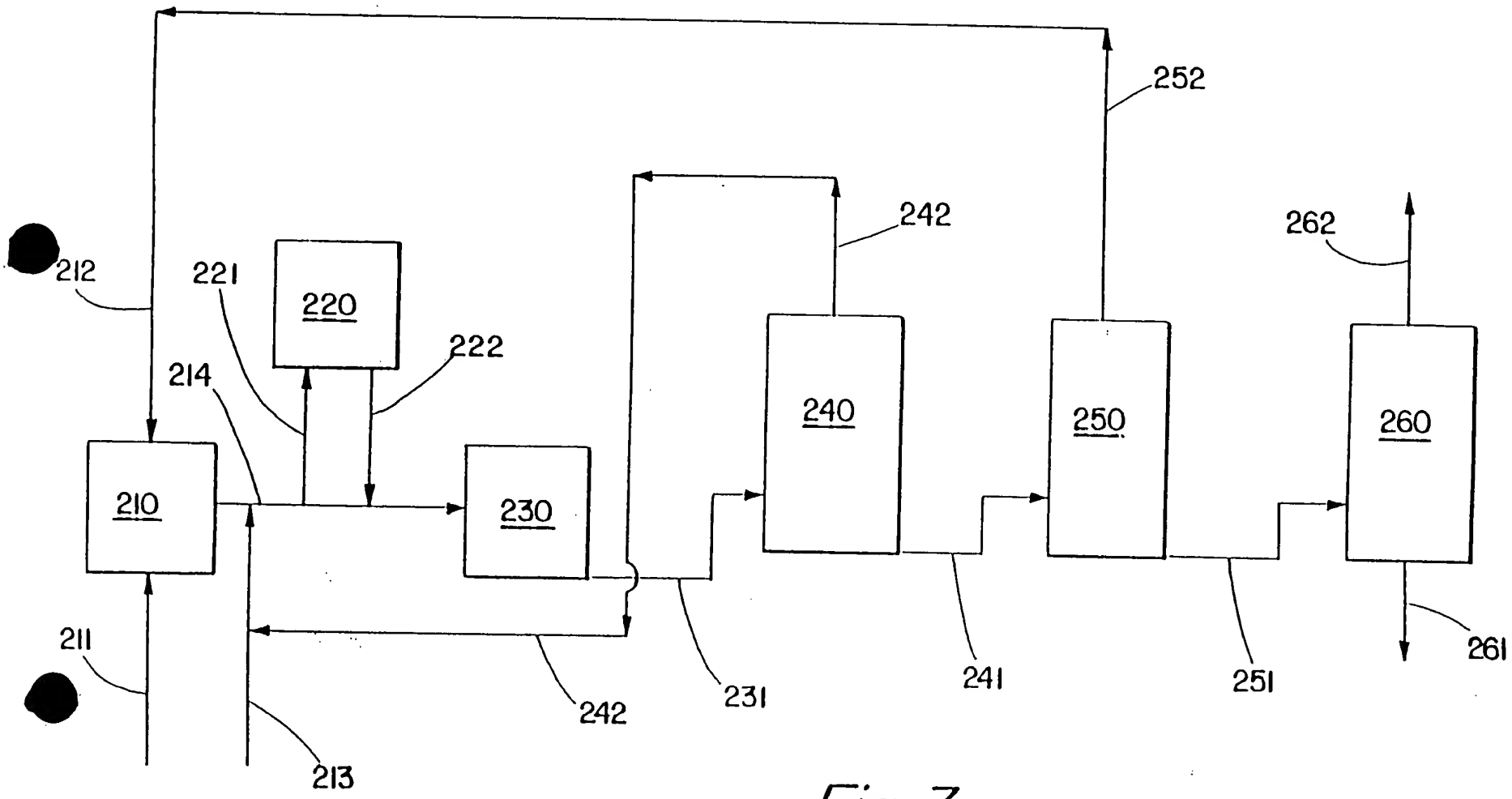
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Fig. 3

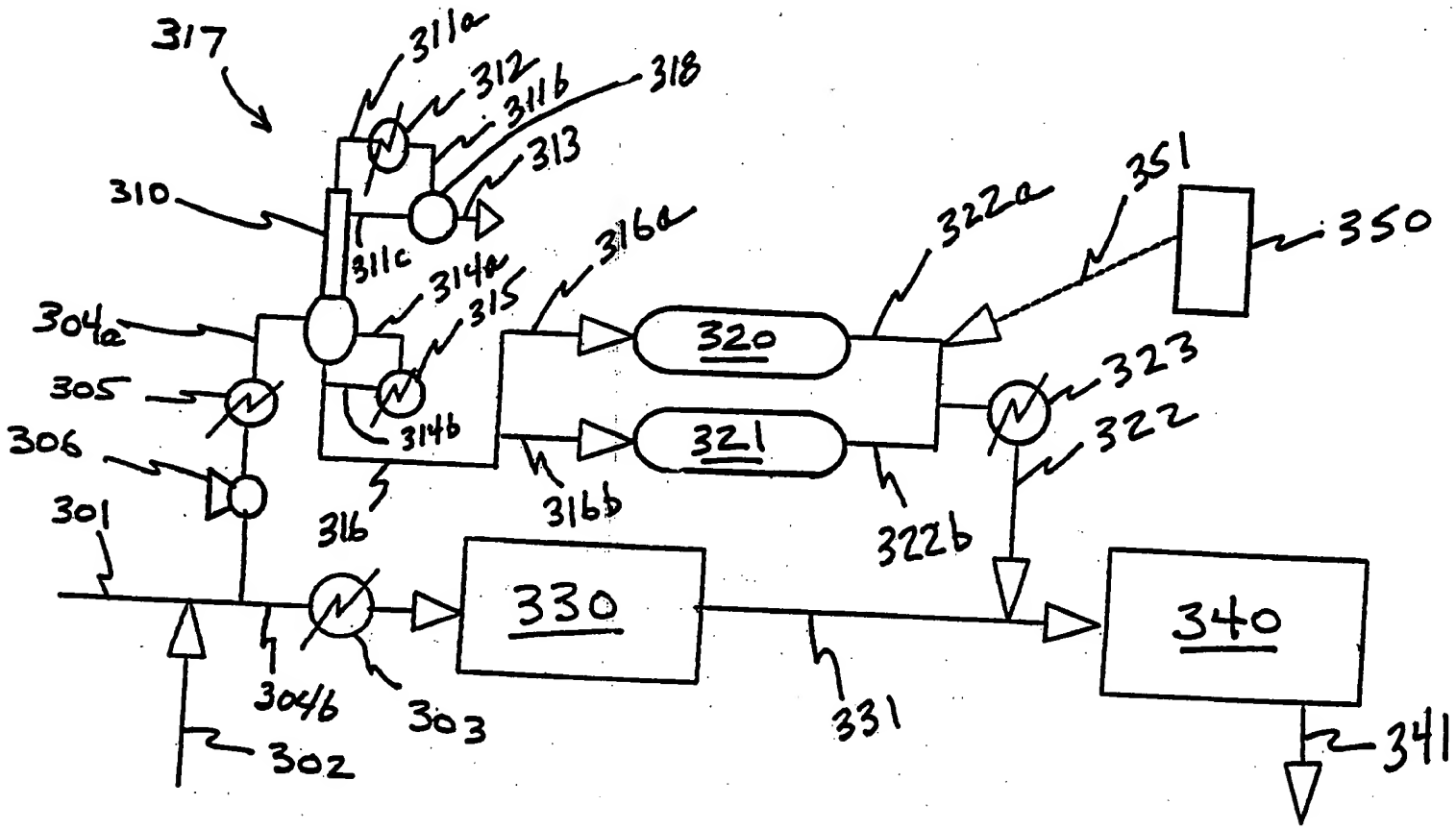
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FIG. 4

FIGURE 5. 2-PHENYL ISOMER DISTRIBUTION DETERGENCY STUDY

	REDEPOSITION		DIRTY MOTOR OIL		DUST SEBUM		GRASS		BLOOD,MILK,SOIL		EMPA 101&104		CLAY	
2-PHENYL	cotton	poly/cotton	cotton	poly/cotton	cotton	poly/cotton	cotton	poly/cotton	cotton	poly/cotton	cotton	poly/cotton	cotton	poly/cotton
14.20	-3.36	-12.77	21.36	-2.52	3.84	-6.15	-1.17	-1.77	2.57	5.95	7.07	11.67	9.27	8.70
26.20	-3.61	-12.98	23.07	-0.51	4.05	-6.08	-0.63	-1.77	2.21	6.06	7.17	12.58	9.76	9.05
38.20	-4.22	-10.51	22.56	1.90	4.38	-5.79	-1.10	-1.55	2.83	6.95	8.75	13.40	9.25	9.30
50.20	-3.40	-9.23	20.91	1.67	4.94	-4.48	-0.88	-1.66	3.27	6.70	9.11	16.56	10.08	9.74
62.20	-3.60	-9.51	22.89	3.01	4.27	-3.95	-1.21	-1.69	2.72	7.48	10.86	19.10	9.17	10.50
74.30	-3.82	-7.78	22.49	3.33	4.68	-3.30	-1.56	-1.70	3.52	8.48	11.11	18.00	10.50	10.61

CONDITIONS: *tergotometer*

150ppm hardwater

100 rpm

100°F

2g./load

15 min.wash/5 min.rinse

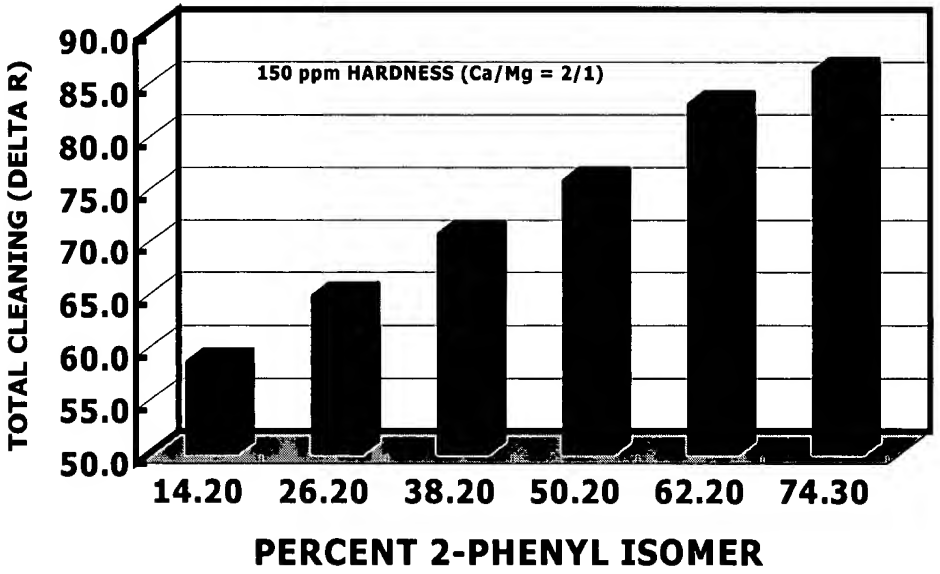


FIGURE 6. Conventional LAS (A225) HARD WATER TURBIDITY

SOLUTION	LAS STOCK	HARD WATER	Water Hardness ppm	LAS WT%	PH	TURBIDITY
1	100.00	0.00	0.00	1.12	10.15	0.00
2	99.94	1.02	304.44	1.11	10.32	0.20
3	100.33	2.00	588.95	1.10	10.20	1.00
4	100.76	2.46	718.17	1.10	10.18	6.00
5	100.05	2.95	863.05	1.09	10.27	88.50
6	99.78	4.04	1172.61	1.08	10.22	834.00

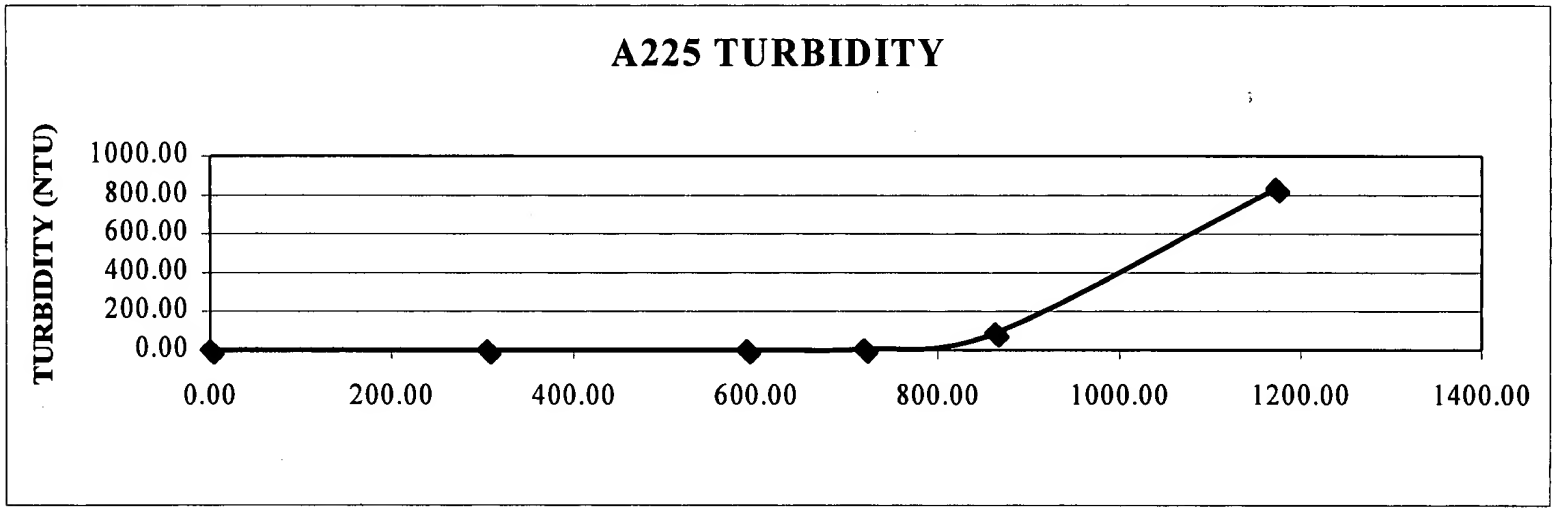


FIGURE 7. Super High 2-phenyl LAS HARD WATER TURBIDITY

SOLUTION	LAS STOCK	HARD WATER	Water Hardness ppm	LAS WT%	PH	TURBIDITY
1	101.70	0.00	0.00	1.13	9.71	0.60
2	101.36	1.05	308.96	1.12	9.92	0.30
3	101.00	3.01	872.06	1.10	9.55	1.30
4	101.79	4.01	1142.12	1.09	9.97	4.70
5	100.30	5.17	1477.12	1.07	9.90	30.00
6	102.89	7.04	1929.79	1.06	9.84	305.00
7	93.42	8.00	2376.95	1.04	9.64	1098.00
6	100.83	9.15	2507.04	1.04	9.79	850.00

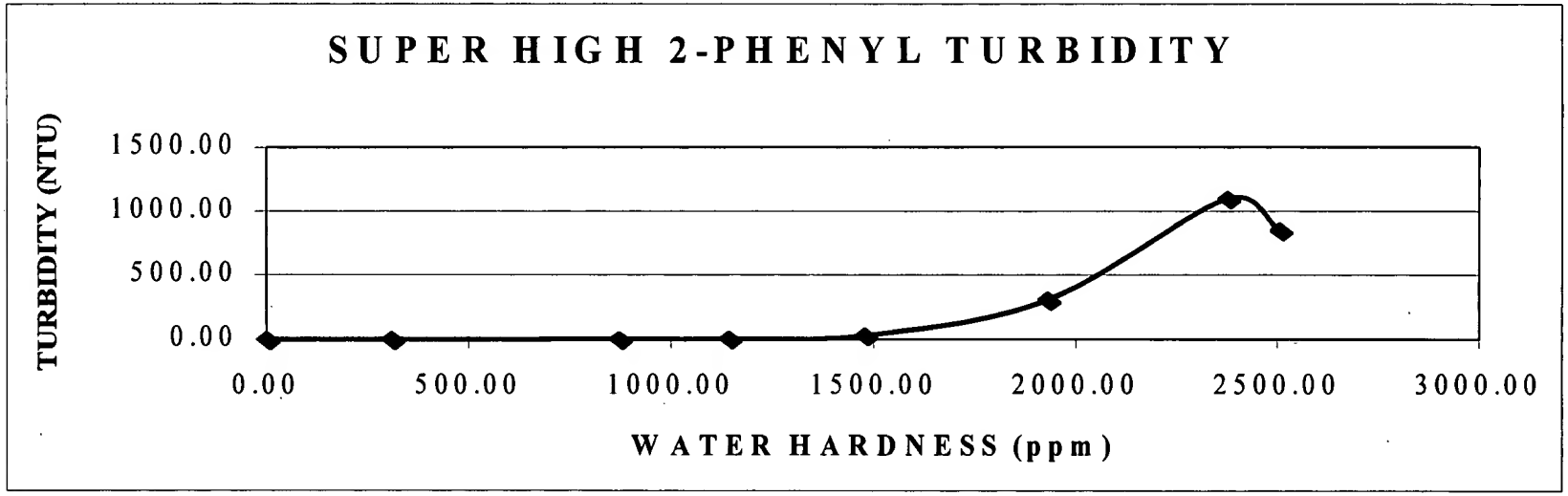


FIGURE 8. Hard water tolerance comparison of Super High 2-phenyl sodium-LAS versus conventional sodium-LAS at 25°C.

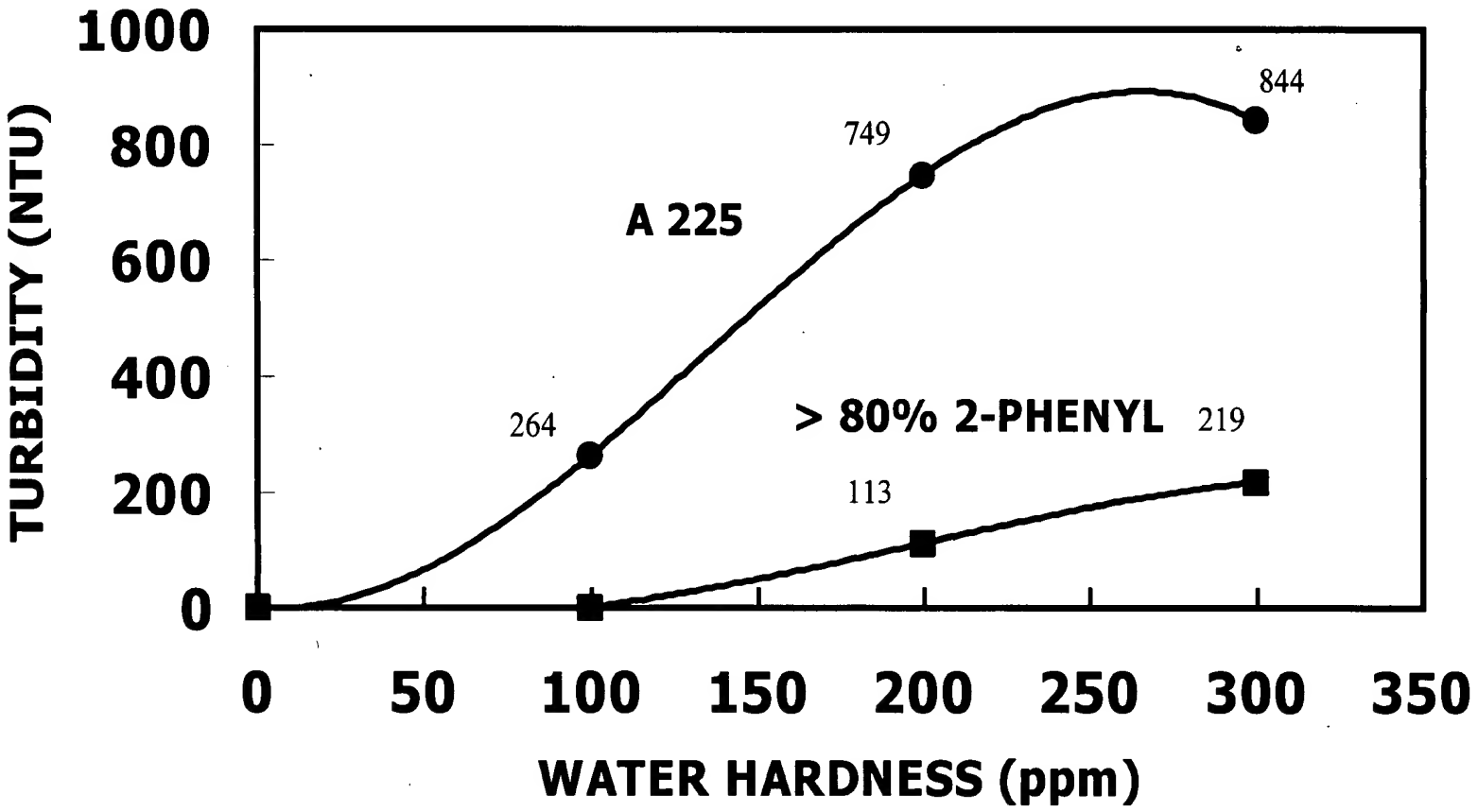
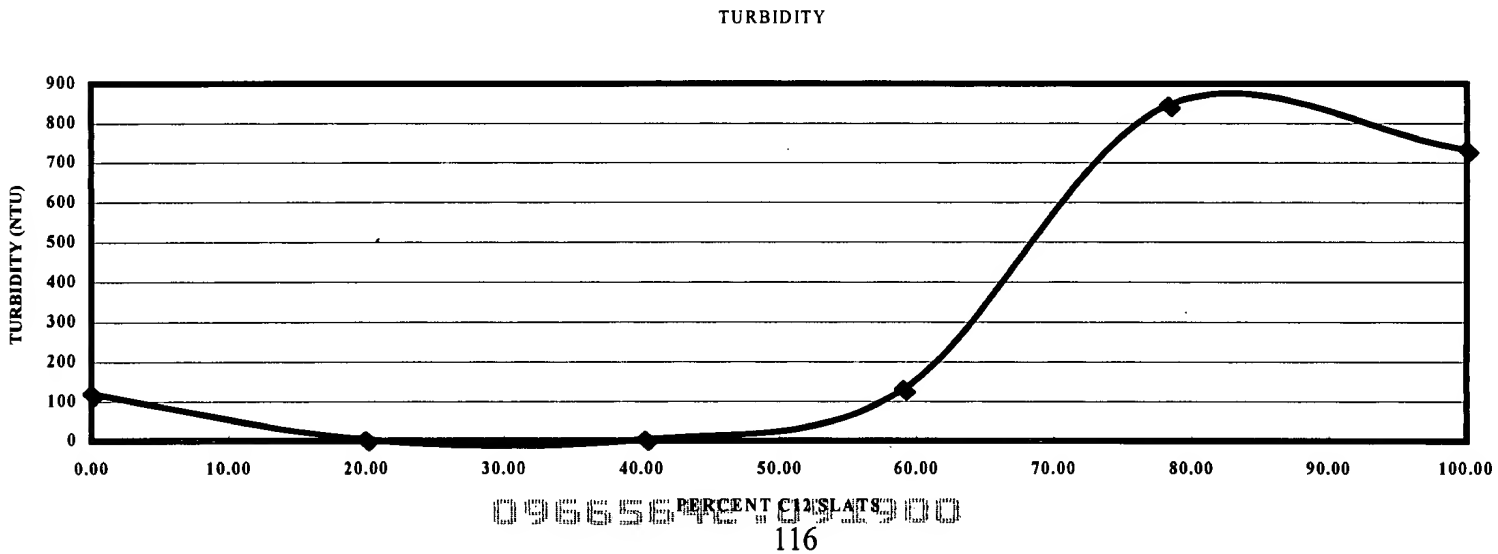


FIGURE 9. Turbidity study comparing of Super High 2-phenyl sodium-LAS ("SLAS") versus Super High 2-toluyl sodium-LAS ("SLATS") at 25°C.

SAMPLE	GMS SLATS (8053-8)	GMS SLAS (7961-97-2)	GMS HARD WATER	GMS DI WATER	HARD WATER	% SLATS	TURBIDITY
1	8.11	0	7.98	784.22	300.47	100.00	733
2	6.54	1.82	8.04	784.27	302.59	78.23	845
3	4.81	3.34	8.02	784.27	301.92	59.02	132
4	3.36	4.99	8.08	784.15	304.13	40.24	3.9
5	1.6	6.43	8.12	784.05	305.78	19.93	3.5
6	0	8	8.02	791.34	299.34	0.00	120

SLAS + SLATS = 100 @ 300 PPM



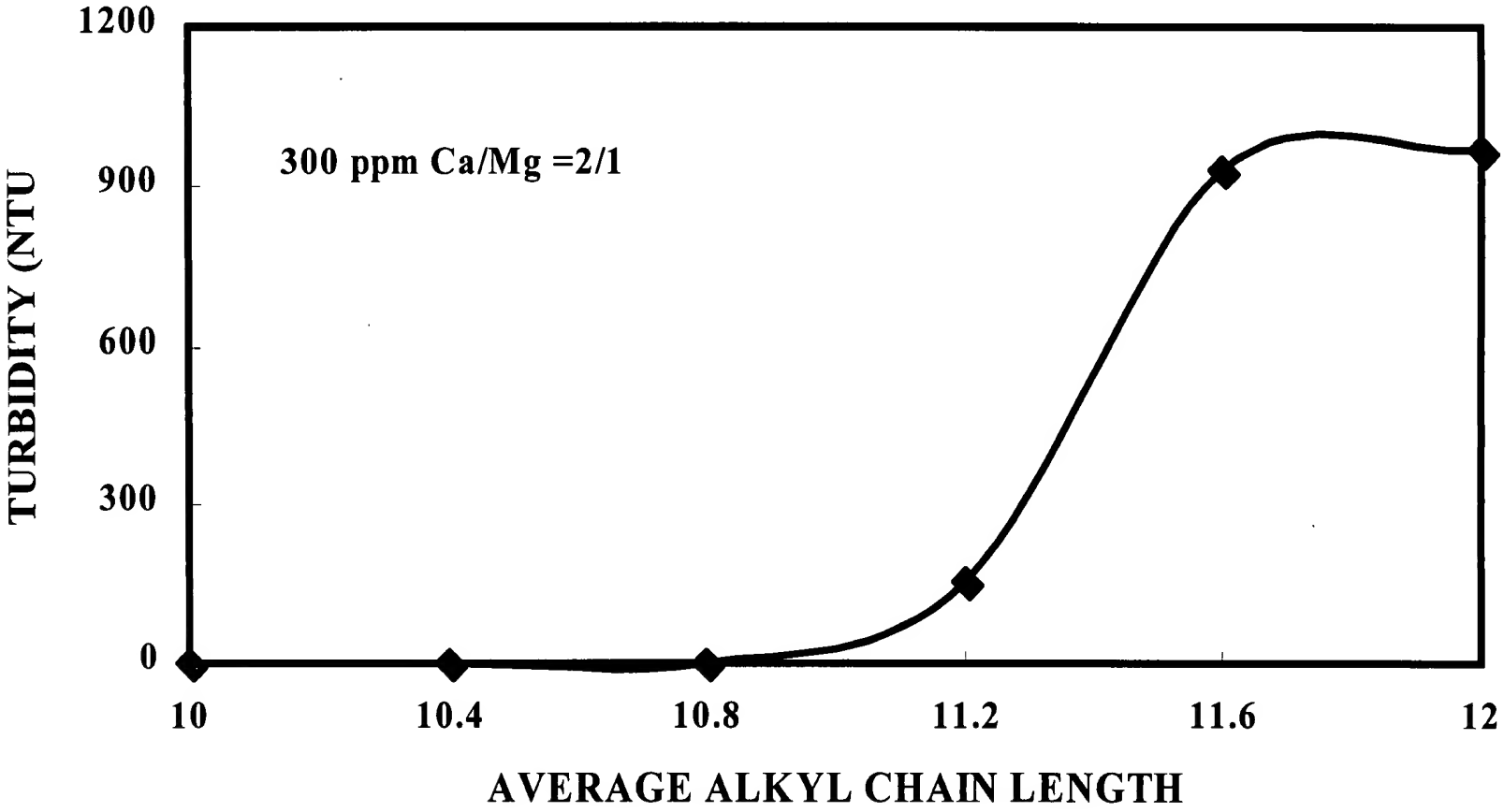


FIGURE 10. SLATS ALKYL CHAIN TURBIDITY AT 300 ppm HARD WATERs